

# Characteristic Overview of Sociodemographic Patient with Cleft Lip and Palate in the Cleft Centre of Dental Hospital Universitas Padjadjaran, West Java Province Indonesia

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**Abstract:** *Sociodemographic characteristics describe the demographical aspect of patient with cleft lip and palate. The aim of the current study was to reveal sociodemographic characteristics of cleft lip and palate patients in the Cleft Centre of Dental Hospital Universitas Padjadjaran, West Java Province Indonesia. The records and questionnaires of total 143 patients treated between 1 January 2017 to 31 December 2017 at the Cleft Centre of Dental hospital Universitas Padjadjaran were assessed on a retrospective basis. Data regarding cleft type, sex and side of cleft, age, gender, income, occupation, and area of living were collected and analyzed. Cleft lip and palate (53.8%) was most frequently found, followed by cleft lip only (35.7%) and cleft palate only (10.48%). The distribution of Cleft lip and palate types differed significantly between rural and urban population with the frequency of cleft lip being higher in urban but that of cleft lip and palate higher in the rural population ( $p < 0.05$ ). In conclusion, we found a high occurrence rate of cleft lip and palate in West Java than other type. Most of the study subjects live in a rural area and have lower socioeconomic status.*

**Keywords:** cleft lip and/or cleft palate, sociodemographic

## 1. Introduction

Orofacial clefts (OFCs) are common congenital malformations of the lip, palate, or both caused by complex genetic and environmental factors.<sup>1</sup> OFC may involve the lip, the roof of the mouth (hard palate), or the soft tissue in the back of the mouth (soft palate). OFC also involves structures around the oral cavity which can extend onto the facial structures resulting in oral, facial, and craniofacial deformity. The incidence varies among different ethnic populations and is presumed to be higher in developing countries.<sup>2</sup> In general, the Asian and American Indian populations have the highest prevalence of 1 in 500 live births, while the prevalence is in the European population group (caucasian) which is 1 in 1000 live births and the lowest in the African population, which is 1 in 2500 live births.<sup>3,4</sup>

Oral clefts bring a wide spectrum of ramifications for the health and quality of life of affected individuals throughout their lifespan. Children with cleft lip and/or cleft palate are associated with difficulties in feeding, growth, cognitive development, speech and behavior and require several surgical, medical, nutritional, dental, and other healthcare interventions. Furthermore, people with clefts are often subject to intense social stigma and discrimination.<sup>3,5</sup>

Various studies have been published to define the factors affecting clefts, but it is as important to collect data on the socioeconomic aspects of the cleft problem for better planning of health care delivery to these patients. The assessment of socioeconomic status of these children will provide an opportunity to assess their influence of

socioeconomic factors on their oral health. However, there are not many studies about the sociodemographic profile of patients with OFCs in Indonesia. Hence, the current study was planned to assess the sociodemographic status of OFC patients in West Java territories.

## 2. Methods

The records of a total 143 cleft patients treated between 1 January 2017 until 31 December 2017 at the hospitals of West Java, and the data collected by the Cleft Center, Dental Hospital Universitas Padjadjaran. A pretested interviewer administered questionnaire was used and the data were collected from the parents of the child if the child was a minor or the patient himself/herself if a major. Data regarding cleft type, sex and side of cleft, age, gender, income, occupation, and area of living was collected and analysed. Data have been summarized by counts and percentages. Categorical variables have been compared between subgroups by Chi-square test or Fisher's exact test as appropriate;  $p < 0.05$  has been considered statistically significant.

## 3. Results

Table 1 depicts the distribution of study subjects based on age and gender. The study sample consisted of 143 study subjects. 81 (56.4%) were males and 62 (43.5%) were females. The age of the patient at the first visit ranged from 1 month to 10 years, with a median age at admission of 1.5 years.

**Table 1:** Distribution of study subjects based on age and gender

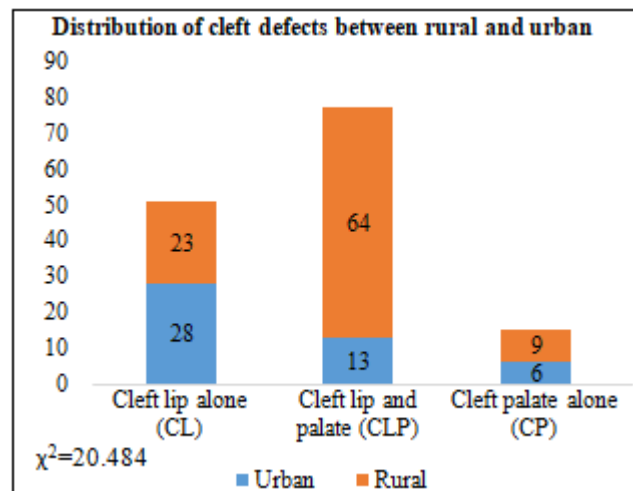
| Age of Patients in years | Male      | Female    | %          |
|--------------------------|-----------|-----------|------------|
| 0-1                      | 52        | 37        | 2,09       |
| 5-Jan                    | 24        | 20        | 48,96      |
| 10-May                   | 2         | 2         | 11,18      |
| > 10                     | 3         | 3         | 28,87      |
| <b>Total</b>             | <b>81</b> | <b>62</b> | <b>100</b> |

Table 2 depicts the distribution of study subjects based on cleft types. Of the 143 children, 51 cases (35.70%) had cleft lip only, distributed as following: 39 cases (27.30%) with unilateral cleft lip and 12 cases (8.40%) with bilateral cleft lip. 77 cases (53.83%) had cleft lip and palate, 47 cases (32.86%) of which were unilateral and 30 cases (20.96%) were bilateral. Cleft palate alone comprising 15 cases (10.48%) of total patients. Of all the cases 80 (55.9%) were male and 63 (44.1%) were female.

**Table 2:** Distribution of cleft type

| Cleft type                      | Male      | Female    | Total Number | Percentage |
|---------------------------------|-----------|-----------|--------------|------------|
| Unilateral cleft lip            | 22        | 17        | 39           | 27,30      |
| Bilateral cleft lip             | 7         | 5         | 12           | 8,40       |
| Unilateral cleft lip and palate | 26        | 21        | 47           | 32,86      |
| Bilateral cleft lip and palate  | 16        | 14        | 30           | 20,96      |
| Cleft palate                    | 9         | 6         | 15           | 10,48      |
| <b>Total</b>                    | <b>80</b> | <b>63</b> | <b>143</b>   | <b>100</b> |

Figure 1 depicts the distribution of study subjects based on cleft types and location. Of cases 143 recruited, 96 (67.13%) study subjects were residing in rural areas, and 47 (32.86%) were residing in urban areas. Among the CL group, 23 (16.08%) study subjects were residing in rural areas and 28 (19.58%) were residing in urban areas. Among the CP group, 9 (6.29 %) study subjects were residing in rural areas and 6 (4.19%) were residing in urban areas. Among the CLP group, 64 (44.75%) study subjects were residing in rural areas and 13 (9 %) were residing in urban areas. Subgroup analysis was done on the basis of rural and urban status. Pearson Chi-square was performed, and relationships between children coming from the rural and urban background was found significant differences. The frequency of CLP is significantly higher in rural than in urban children ( $p < 0.05$ ). Further comparison between the subgroups using Fisher's exact test as shown in Table 3 shows that the frequency of CL compared to other clefts (CLP and CP) was significantly higher in urban compared to the rural population whereas the frequency of CLP compared to CP alone or CL alone was significantly higher in rural population. The frequency of CP alone was not differ between the rural and urban children.

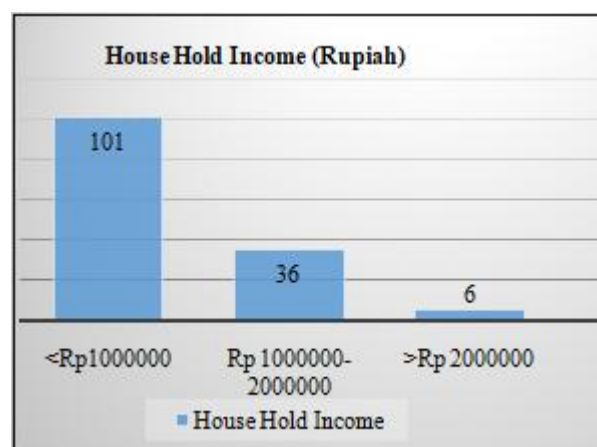


**Figure 1:** Distribution of study subjects based on cleft types and location  $\chi^2 = 20.484$

Chi-square test p value  $< 0.0003$ ; Fisher's exact test two-tailed p value for CL = 0.001; Fisher's exact test two-tailed p value for CPL = 0.002; Fisher's exact test two-tailed p value for CP = 0.56.

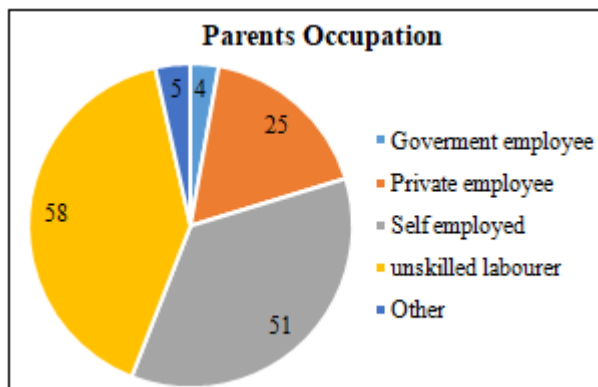
#### House Hold Income and Parental Occupation

More than half of the patient's families (70.62%) had a household income of  $< \text{Rp } 1,000,000$  (approximately less than 100 USD dollars) per month (101/143), and only 4.19% of the families had a household income more than  $\text{Rp } 2,000,000$  approximately per month. (Figure 2).



**Figure 2:** House Hold income of family (monthly)

Parental occupation is presented in figure 3. Paternal occupation was divided into government employee, private employee, self employee, unskilled laborer and other. Most of parent who look for therapy for their children working as unskilled labour and self employed.



**Figure 3:** Distribution of patient according to paternal occupation

#### 4. Discussion

A child with an oral cleft is born with a unique challenge to fight against various problems relating to the appearance, dental arch dimensions, growth of the face and speech development.<sup>6</sup> Their speech abilities are reported to be inferior to those of the healthy subjects, and they have been stated to misarticulate frequently the dental consonants. The present study was planned to record the sociodemographic profile of patients with OFCs in a hospital setting. This study was conducted at Cleft Centre, Dental Hospital Universitas Padjadjaran, West Java, which is a public hospital to provide treatments for orofacial patients by multidisciplinary teams such as general medicine, oral and maxillofacial surgery, pediatrician, orthodontist, pedodontics, etc.

In the present study show males had a higher prevalence of orofacial anomalies when compared with females. This was in accordance with the study by Sjamsudin and Maifara that stated the cleft was more frequently found in male patients rather than females in West Java population.<sup>2</sup> Majority of the cleft lip patients had a unilateral deformity with a unilateral to bilateral ratio of 2:1. Furthermore, our data show that left-sided clefts were more common than right (7:3). This is similar to a study conducted by Sjamsudin and Maifara which also suggested that clefts of the left side occurred more often than the right side and boys were affected more commonly than girls. No definite explanation for the left and right side differences are given in literature. Johnston and Brown have suggested that blood vessels supplying the right side of the fetal head leave the aortic arch closer to the heart and may be perfused better by blood than those on the left side.<sup>7</sup>

In the present study the distribution of the oral clefts is seen to differ significantly between rural and urban population. The overall pattern of clefts is also different between the two populations. The frequency of CL in comparison to other clefts is higher in cases from urban areas whereas that of CLP is higher in cases from rural areas. In our study group, income of most families fell short of Rp. 1000000/-per month and with government criteria "poverty line" including household income less than Rp. 600000 per month, it may be said that majority of patients belong to the low socioeconomic strata.<sup>8</sup> This is similar to a study conducted by Sjamsudin and Maifara that found most of the cleft

patients have lower socioeconomic status.<sup>2</sup> The socioeconomic status of a family determines the nutritional status of the children of the family that in turn determines their general health.<sup>9</sup> There might exist a correlation between socioeconomic status of family and risk of having a child with CL/CP in West Java population. Even though, they are not directly related, but probably due to maternal nutrition status. The nutrition of a pregnant woman was probably a link between the social class and the incidence of CL/CP.

In the current study, most of the study subjects were unskilled workers. The parental occupation was collected in this study because there could be a parental occupational exposure to different agents during pregnancy, favoring the development of congenital anomalies such as oral clefts. However, such association was not established in this study.

Research suggests rural residence less likely to have insurance, have fewer healthcare providers, and travel longer distances for medical care. Furthermore, women living in rural areas are less likely to have adequate access to obstetrical care.<sup>10</sup> In light of the inequality to obstetrical care access, rural residence may not enter into prenatal care early and may continue to engage in behaviors associated with increased cleft risk such as smoking and taking certain medication.

#### 5. Conclusion

As a result of the study we found a high occurrence rate of cleft lip and palate in West Java than other type. Cleft in male patients were more frequent than females. Most of the patients with cleft live in a rural area and have lower socioeconomic status.

#### 6. Acknowledgement

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